Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-25 are canceled.

26. (New) Apparatus for measuring straightness in at least one plane and at least one of pitch and yaw in the movement of a first body with respect to a second body along an axis, the apparatus comprising:

a transmitter unit mountable on the first body;

an optic unit mountable on the second body;

wherein the transmitter unit directs at least one light beam towards the optic unit;

wherein one of the transmitter unit and the optic unit is provided with at least one detector to detect two or more light beams,

wherein the detection method for each light beam is substantially the same;

and wherein the displacement of the two or more light beams incident on the at least one detector enables measurement of straightness error in at least one plane and at least one of pitch and yaw during said movement of the first body relative to the second body.

27. (New) Apparatus according to claim 26 wherein displacement of the two or more light beams incident on the at least one detector also enables measurement of roll error during said movement of the first body relative to the second body.

28. (New) Apparatus according to claim 26 wherein a common equation may be used to determine different deviations.

29. (New) Apparatus according to claim 26 wherein three light beams are detected at said at least one detector, such that pitch, roll, yaw errors or straightness errors in two planes are determined.

30. (New) Apparatus according to claim 26 wherein the optic unit is provided with two or more optical elements to reflect said two or more light beams towards the transmitter unit

31. (New) Apparatus according to claim 30 wherein the two or more optical elements comprise two or more retroreflectors.

32. (New) Apparatus according to claim 31 wherein two of the retroreflectors are positioned side-by-side in the optic unit and the third retroreflector is positioned behind one of the first and second retroreflectors.

33. (New) Apparatus according to claim 32 wherein the third retroreflector is positioned conceptually behind one of the first and second retroreflectors.

34. (New) Apparatus according to claim 26 wherein the at least one detector comprise at least one pixelated image sensor.

35. (New) Apparatus according to claim 26 wherein the two or more light beams remain substantially parallel when transmitted and/or reflected.

36. (New) Apparatus according to claim 26 wherein the two or more light beams remain substantially collimated throughout the system.

37. (New) Apparatus according to claim 26 wherein said at least two light beams are transmitted from at least one coherent light source and wherein the light beams are intensity modulated to reduce their coherence length.

38. (New) Apparatus according to claim 37 wherein the light beams are intensity modulated to cause frequency variation which reduces the coherence pattern of the detected beams.

39. (New) Apparatus according to claim 38 wherein said at least two light beams are intensity modulated by turning the at least one light source on and off.

40. (New) Apparatus according to claim 26 wherein a light source is provided to produce the at least one beam and wherein an optical fibre separates the light source from the start of the projected light beam.

41. (New) Apparatus according to claim 26 wherein at least one optical element within the system is mounted on a bar to reduce movement of the optical element due to expansion.

42. (New) Apparatus according to claim 41 wherein the bar is thermally stabilised to minimise expansion of the bar and thus minimise movement of the at least one optical element mounted on the bar.

43. (New) Apparatus for measuring squareness of the axes of a machine having first and second parts movable relative to one another, the apparatus comprising:

a base unit mountable on the first machine part;

a transmitter unit mountable on the base unit, the base unit and at least one surface of the transmitter unit being provided with cooperating elements to define the position of the transmitter unit relative to the base unit in a plurality of known relative orientations of the transmitter unit and thereby define the directions of at least one light beam;

an optic unit mounted on the second machine part;

wherein the transmitter unit directs at least one light beam towards the optic unit;

wherein one of the transmitter unit and the optic unit is provided with one or more detectors to detect one or more light beams transmitted to or reflected from the optic unit;

such that by orientating the transmitter unit along two axes of the base unit and measuring the lateral displacement of the at least one light beam on the at least one detector, the squareness of those two axes can be determined.

44. (New) Apparatus for measuring deviation in the movement of a first body with respect to a second body comprising:

a transmitter unit mountable on the first body;

an optic unit mountable on the second body;

wherein the transmitter unit directs at least one light beam towards the optic unit;

wherein one of the transmitter unit and the optic unit is provided with one or more detectors to detect one or more light beams transmitted to or reflected from the optic unit;

wherein the position of the light beam on the detector is used as feedback to adjust the position of the transmitter unit or change the movement vector of the second body in order to maintain the light beam on the detector during relative movement of the first and second bodies.

45. (New) Apparatus according to claim 43 wherein the transmitter unit is mounted on an adjustable base unit which is mounted on the first body and wherein the position of the transmitter unit is adjusted by adjusting the adjustable base unit.